

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-11 (Canceled).

12 (Currently Amended). A catheter having a proximal end and a distal end for use in a intraluminal treatment system wherein a treating element is advanced from the proximal end of the catheter to the distal end by use of pressurized fluid, the catheter comprising:

first, second, third and fourth lumens only, and free of any additional lumens, extending substantially from the proximal end to the distal end of the catheter, the first lumen being sized to slidably receive the treating element to advance the treating element from the proximal end of the catheter to the distal end of the catheter and to prevent the treating element from exiting the first lumen to outside the catheter at the distal end of the catheter, the first lumen being in fluid communication in two directions with the second and third lumens at the distal end thereof, wherein said second and third lumens are fluid lumens which are able to move fluid from the distal end of the catheter to the proximal end of the catheter to advance the treating element to the distal end of the catheter and are able to move fluid from the proximal end to the distal end of the catheter to return the treating elements from the distal end of the catheter to the proximal end of the catheter and the fourth lumen being open at the distal end and sized to receive a guidewire.

13 (Original). The catheter of Claim 12 wherein the fourth lumen includes a protective liner.

14 (Previously presented). The catheter of Claim 13 wherein the protective liner is polyimide.

15 (Previously presented). The catheter of Claim 12 wherein the proximal and distal ends of the catheter are of different stiffness and flexibility, and the distal end of the catheter has a cross-sectional area smaller than the proximal end of the catheter and a non-circular cross-sectional shape so as to permit perfusion.

16 (Original). The catheter of Claim 15 wherein the proximal end is fused to the distal end.

17 (Original). The catheter of Claim 15 wherein the proximal end and distal end are formed through a single variable extrusion.

18-23 (Canceled).

24 (Currently amended). A catheter having a proximal end and a distal end for use in a intraluminal treatment system wherein a treating element is advanced from the proximal end of the catheter to the distal end by use of pressurized fluid, the catheter comprising:

first, second, third and fourth lumens extending substantially from the proximal end to the distal end of the catheter, the first lumen being sized to slidably receive the treating element to advance the treating element from the proximal end of the catheter to the distal end of the catheter and to prevent the treating element from exiting the first lumen to outside the catheter at the distal

end of the catheter, the first lumen being in fluid communication in two directions with the second and third lumens at the distal end thereof, wherein said second and third lumens are fluid lumens which are able to move fluid from the distal end of the catheter to the proximal end of the catheter to advance the treating element to the distal end of the catheter and are able to move fluid from the proximal end to the distal end of the catheter to return the treating elements from the distal end of the catheter to the proximal end of the catheter and the fourth lumen being open at the distal end and sized to receive a guidewire,

wherein the proximal and distal ends of the catheter are of different stiffness and flexibility, and the distal end of the catheter has a cross-sectional area smaller than the proximal end of the catheter and a non-circular cross-sectional shape so as to permit perfusion, and

The catheter of Claim 15, wherein said first lumen has a circular cross-sectional shape and said second and third lumens have a non-circular cross-sectional shape.

25 (Previously presented). The catheter of Claim 15 wherein said second and third lumens have a crescent shape.

26 (Previously presented). The catheter of Claim 12 wherein said second and third lumens have a crescent shape.

27 (Previously presented). The catheter of Claim 12 wherein said second and third lumens have a partially crescent shape.

28 (New). A catheter having a proximal end and a distal end for use in a intraluminal

treatment system wherein a treating element is advanced from the proximal end of the catheter to the distal end by use of pressurized fluid, the catheter comprising:

first, second, third and fourth lumens extending substantially from the proximal end to the distal end of the catheter, the first lumen being sized to slidably receive the treating element to advance the treating element from the proximal end of the catheter to the distal end of the catheter and to prevent the treating element from exiting the first lumen to outside the catheter at the distal end of the catheter, the first lumen being in fluid communication in two directions with the second and third lumens at the distal end thereof, wherein said second and third lumens are fluid lumens which are able to move fluid from the distal end of the catheter to the proximal end of the catheter to advance the treating element to the distal end of the catheter and are able to move fluid from the proximal end to the distal end of the catheter to return the treating elements from the distal end of the catheter to the proximal end of the catheter and the fourth lumen being open at the distal end and sized to receive a guidewire,

wherein said first lumen has a circular cross-sectional shape and said second and third lumens have a non-circular cross-sectional shape.